REMARKS

Favorable reconsideration of this application is respectfully requested in view of the following remarks.

Applicants wish to thank the Examiner for the indication of allowable subject matter in Claim 8.

Claim 5 stands rejected under 35 U.S.C. § 112, first paragraph as failing to comply with the written description requirement. According to the Official Action, Claim 5 contains subject matter that does not convey to one of ordinary skill that the inventors, at the time the application was filed, had possession of the claimed invention. Claim 5 is an original claim reciting that the polymer is MFA. Page 8 of the specification describes that in one embodiment, the polymer material is an MFA, e.g., the MFA produced by AUSIMONT ® and sold under the trade name HYFLON ® MFA. Based at least on this disclosure, one of ordinary skill would readily understand that Applicants had possession of the invention set forth in Claim 5 at the time of filing. Not only is Claim 5 an original claim, but the specification provides specific written description support for the subject matter recited in Claim 5.

It is thus respectfully submitted that the specification satisfies the written description requirement with respect to the subject matter recited in Claim 5.

Notwithstanding the foregoing, to help facilitate the Examiner's understanding of the MFA polymer recited in Claim 5, attached are several informational pages obtained from the internet describing HYFLON® MFA. Quite clearly, a person skilled in the art would readily understand what is meant by the Claim 5 reference to MFA. Nevertheless, should the Examiner still have questions about this matter, the Examiner is kindly asked to telephone the undersigned.

Claim 1 has been amended to include the subject matter recited in Claim 8. Allowance of Claim 1 is earnestly solicited.

Claims 2-7 and newly added dependent claims 9-16 depend from allowable Claim 1 and are thus also allowable.

Early and favorable action with respect to this application is respectfully requested.

Should any questions arise in connection with this application or should the Examiner believe that a telephone conference with the undersigned would be helpful in resolving any remaining issues pertaining to this application, the undersigned respectfully requests that he be contacted at the number indicated below.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

Date: August 22, 2006

By: _____
Matthew L. Schneider
Registration No. 32,814

P.O. Box 1404
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FLUOROTHERM™

MFA CHARACTERISTICS AND PROPERTIES

MFA (sold under the trade name "Hyflon") is a perfluoropolymer (totally fluorinated) and has a chemi structure similar to PFA. MFA exhibits the outstanding thermal behavior and chemical resistance foun PTFE, PFA and FEP. In addition, parts made with MFA have been shown to have smooth finished surfaces. This makes MFA a good candidate for the semiconductor, electronics and biologic applicatio where sanitary flow (fully swept flow – no dead spots) is required. MFA is reported to have better thermal stress crack resistance, higher thermal rating and superior mechanical and electrical properti versus FEP, at high temperatures.

Fluorotherm produces tubing of MFA in all industrial sizes, with standard wall thicknesses of 0.031", 1mm, and 0.062". Custom sizes are available upon request.

MFA has low haze values and transmittance of wavelengths in the visible and the UV bands of the spectrum.

MFA** – Perfluoroalkoxy (methyl vinyl ether) - TYPICAL PROPERTIES

Property	Value	Units	Metho
	MECHANICAL PROPERTIES		
Tensile Strength, 73°F	4060 - 5220 28 - 36	psi MPa	
Elongation, 73°F	300 - 360	%	
Flexural Strength, 73°F	No break at flexure		D 790
Impact Strength, Izod At -40 deg C	>105		
Youngs Modulud	64000 - 70000 440 - 480	psi MPa	D 695
Yield Strength At 23 deg C	1740 12	psi MPa	
Hardness	D59	Durometer	
Density (as polymerized)	2.12 to 2.17	gm/cu.cm	D 792
	THERMAL PROPERTIES		
Coefficient of Linear Expansion 20 to 100 deg C	12 to 20 x 10^{-5}	K^{-1}	E 831
Melting Point	536 - 554 280 - 290	deg F deg C	D 3418
Thermal Conductivity	Similar to PFA	Btu/hr-.ft-deg F W/m/deg K	ASTM C 1
Specific Heat	Similar to PFA	Btu/lb/deg F kJ/Kg/deg K	
Heat Distortion Temperature, 66 lb/sq.in (0.455 MPa)		deg F deg C	D 648
Service Temperature	Slightly lower than PFA	deg F	

		deg C	
Processing Temperature	644 - 716 340 to 380	deg F deg C	
ELECTRICAL PROPERTIES			
Surface Arc-Resistance	210	sec	D 495
Volume Resistivity, dry, @ 50% RH	$> 10^{17}$	ohm-cm	D 257
Surface Resistivity, @ 100% RH	$> 10^{17}$	Ohm/sq.	
Dielectric Constant 100kHz	1.95	ε	D150-8:
Dielectric Strength	34 - 38	kV mm^{-1}	D149
Dissipation Factor @ 100 kHz	$< 5 \times 10^{-4}$		D150-8:
OTHER PROPERTIES			
Refractive Index		n_D^{25}	D 542
Water Absorption	< 0.03	%	D570-8:
Flame Rating+	V-0		UL-94
Limiting Oxygen Index	> 95	% Oxygen	D 2863
Resistance to Weathering	Excellent		
Specific Gravity	2.12 - .17		D792
Static coefficient of friction	Similar to FEP, PFA		

** Properties are given for MFA Grade 620, Solvay Solexis , Inc.
+ Numerical rating for flame spread is not intended to reflect hazards presented by this or any other material under actua conditions

NOTE: The information, recommendations and opinions contained herein is only a guide and is intended solely for your consideration, inquiry and verification. The suitability of any material under specific conditions of application is not guaran in any manner. Fluorotherm Polymers Inc does not assume legal responsibility for the use of data presented here in any f under any circumstances, any application, test or communication. Nothing contained herein is to be interpreted as a licen authorization to operate under or infringe any patent.

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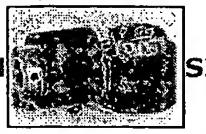
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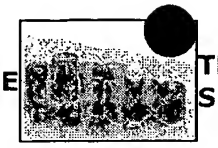
TERMAL SPRAYING

HYFLON® MFA LATEX - Typical Properties

HYFLON MFA is a perfluorinated thermoplastic copolymer of tetrafluoroethylene (TFE) and an appropriate perfluorinated vinylether (PFVE). HYFLON MFA derives its outstanding thermal and chemical resistance from the extremely strong carbon-fluorine bond. It has the advantage over PTFE of being a fully melt processable fluoropolymer (without any reduction of chemical properties). Therefore, it is possible to obtain coatings with very smooth surfaces.

MFA Latex is an MFA aqueous dispersion which can be applied on substrates by air gun or by impregnation by obtaining a polymer wall thickness in the range of 50 - 150 µm. Ausimont has developed an MFA latex for thin anti-stick coatings with a viscosity of 5 - 8 g/10'.

MFA dispersions can be used in their original form or in combination with a suitable primer which improves adhesion strength to the metal surface. It is suggested to use the same primers utilized for PTFE and PFA.

Physical Properties of Pure Polymer	
Melting Point	305 °C min.
Specific Gravity	2.12 - 2.17
Melt Flow Index (5 Kg 372 °C)	5 - 8
Dispersion Composition	
Solid Content	52 - 58%
Surfactant Content	3 - 5%

Physical Properties of Dispersion (Typical Values)	
pH	7.5 - 9.02
Brookfield Viscosity	
at 20°C	22 - 26 Cps
at 30°C	16 - 21 Cps
Conductivity	1000 - 1200 micros/Cm

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Hyflon® PFA and MFA

Hyflon MFA and PFA are semi-crystalline fully-fluorinated melt processable fluoropolymers which offer the highest temperature rating, and broadest chemical resistance of all melt processable fluoropolymers. They are an ideal choice for extreme thermal and chemical environments. The outstanding combination of thermal and electrical properties makes these materials particularly suitable for the plenum wire and cable industry for the insulation of high temperature cables, heating cables and signal wires.

In lining applications, Hyflon PFA and MFA deliver better resistance to stress cracking and lower creep than FEP. They also provide better permeation resistance and a higher temperature rating than competitive materials at a competitive price.

Hyflon grades are available in different physical forms including pellets, powders for electrostatic coating and rotomolding/rotolining, and liquid dispersions for coating and impregnation.

Hyflon MFA and PFA offer these qualities:

- Excellent thermal and chemical resistance
- Melt stability
- Good mechanical properties
- Broad temperature range
- Better stress crack resistance than FEP
- Outstanding permeation resistance

If you have any questions or would like more information about this product, please complete this form.

We have a brochure available for Solvay Solexis Melt Processable Fluoropolymers. You can download it here. The file size is 1 MB.

Click here to access our technical literature for Hyflon MFA and PFA.

Typical Physical Properties

Property	Test Method	Hyflon PFA	Hyflon MFA
Melting Point, min.	D 2116	300 - 310	280 - 290
Specific Gravity (g/cc)	D 792	2.12 - 2.17	2.12 - 2.17
Moisture Absorption, % by weight	%	< 0.03	< 0.03

Solvay Solexis

Responsible Care
Good Chemistry at Work